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STAAS & HALSEY LLP			EXAMINER	
SUITE 700			NGUYEN, JENNIFER T	
1201 NEW YORK AVENUE, N.W.				
WASHINGTON, DC 20005				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/830,073

**Applicant(s)**

KURTENBACH ET AL.

**Examiner**

JENNIFER T. NGUYEN

**Art Unit**

2629

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06/29/08.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 4-11, 13, 15-17, 19, 21, 23 and 25-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4-11, 13, 15-17, 19, 21, 23, and 25-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This Office action is responsive to RCE filed 09/26/08.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1, 4, 6-11, 13, 15-17, 19, 21, 23, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kent (Patent No.: US 7,061,475) in view of Tanimoto et al. (Patent No.: 5,844,561).

Regarding claims 1 and 19, Kent teaches a system (figs. 19a and 19b), comprising:

a three-dimensional (3D) volumetric display output configuration having a display content; and

an input configuration (i.e., fingers, gloved fingers, stylus...) coupled to the volumetric display output configuration (i.e., touching three dimensional display) and comprising a passive sensor (1908) allowing a user to affect the display content through the passive sensor by mapping the affect to a 3D position of a image (col. 13, lines 63-67 and col. 77, line 62 to col. 78, line 29).

Kent differs from claims 1 and 19 in that he does not specifically teach an image on display is a cursor.

Tanimoto teaches a stylus control an image such as a cursor on touch screen (fig. 12A, col. 20, lines 7-39). Therefore, it would have been obvious to one of ordinary skill in the art at

the time the invention was made to incorporate the cursor as taught by Tanimoto in the system of Ely in order to allow user to interactive with the display apparatus more easily and efficiently.

Regarding claim 4, Kent teaches the sensor comprises a touch sensitive surface (col. 25, lines 1-10).

Regarding claim 6, Kent teaches the output configuration comprises one of a dome, a cylinder, a cubical box and an arbitrary shape (col. 77, line 62 to col. 78, line 29).

Regarding claims 7 and 8, Kent teaches the user produces inputs comprising one or directly with a hand, with a surface touching device and with an intermediary device (col. 13, lines 63-67).

Regarding claims 9 and 10, Kent teaches the input configuration further comprises one of an input volume adjacent to the display, wherein the intermediary device comprises one of a stylus (col. 13, lines 63-67).

Regarding claim 11, Kent teaches the input configuration comprises a non-planar 2D input space mapped to the 3D volumetric display (col. 13, lines 63-67).

Regarding claim 13, Kent teaches the input configuration is non-spatial (col. 13, lines 63-67).

Regarding claims 15-17, Kent teaches the input configuration and output configuration define a spatial correspondence between an input space and an output space (col. 13, lines 63-67).

Regarding claim 21, Kent teaches a system (figs. 19a and 19b), comprising:  
a three-dimensional (3D) volumetric display output configuration having a display content; and

an input configuration coupled to the volumetric display output configuration and allowing a user to affect the display content, said input configuration comprising a touch sensitive surface overlaid on said display (col. 77, line 62 to col. 78, line 29).

Kent differs from claim 21 in that he does not specifically teach an image on display is a cursor.

Tanimoto teaches a stylus control an image such as a cursor on touch screen (fig. 12A, col. 20, lines 7-39). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the cursor as taught by Tanimoto in the system of Ely in order to allow user to interactive with the display apparatus more easily and efficiently.

Regarding claim 23, Kent teaches a system (figs. 19a and 19b), comprising:

a three-dimensional (3D) volumetric display output configuration having a display content; and

an input configuration coupled to the volumetric display output configuration and allowing a user to affect the display content, said input configuration comprising a surface motion system detecting motion on a surface of said display (col. 77, line 62 to col. 78, line 29).

Kent differs from claim 23 in that he does not specifically teach an image on display is a cursor.

Tanimoto teaches a stylus control an image such as a cursor on touch screen (fig. 12A, col. 20, lines 7-39). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the cursor as taught by Tanimoto in the system of Ely in order to allow user to interactive with the display apparatus more easily and efficiently.

Regarding claim 25, Kent teaches a system (figs. 19a and 19b), comprising:

a three-dimensional (3D) volumetric display output configuration having a display content; and

an input configuration coupled to the volumetric display output configuration and allowing a user to affect the display content, said input configuration comprising an input device moving in three dimensions on a surface of said display (col. 13, lines 63-67, col. 77, line 62 to col. 78, line 29).

Kent differs from claim 25 in that he does not specifically teach an image on display is a cursor.

Tanimoto teaches a stylus control an image such as a cursor on touch screen (fig. 12A, col. 20, lines 7-39). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the cursor as taught by Tanimoto in the system of Ely in order to allow user to interactive with the display apparatus more easily and efficiently.

Regarding claim 26, Kent teaches a system (figs. 19a and 19b), comprising:

a three-dimensional (3D) volumetric display output configuration having a display content; and

an input configuration (i.e., fingers, gloved fingers, stylus...) coupled to the volumetric display output configuration (i.e., touching three dimensional display) and comprising a passive sensor (1908) allowing a user to manipulate the display content through the passive sensor by mapping the affect to a 3D position of a image (col. 13, lines 63-67 and col. 77, line 62 to col. 78, line 29).

Kent differs from claims 1 and 19 in that he does not specifically teach an image on display is a cursor.

Tanimoto teaches a stylus control an image such as a cursor on touch screen (fig. 12A, col. 20, lines 7-39). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the cursor as taught by Tanimoto in the system of Ely in order to allow user to interactive with the display apparatus more easily and efficiently.

Regarding claim 27, the combination of Kent and Tanimoto teaches the cursor is superimposed within the volumetric display (fig. 12A, col. 20, lines 7-39).

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kent (Patent No.: US 7,061,475) in view of Tanimoto et al. (Patent No.: 5,844,561) and further in view of Ely et al. (Patent No.: 6,667,740).

Regarding claim 5, the combination of Kent and Tanimoto does not specifically teach the sensor comprises magnetic field tracking system.

Ely teaches a touch sensor comprises magnetic field tracking system (col. 13, lines 5-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the magnetic filed tracking system as taught by Ely in the system of the combination of Kent and Tanimoto in order to provide a touch system with low cost and accurately control.

4. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kent (Patent No.: US 7,061,475) in view of Tanimoto et al. (Patent No.: 5,844,561) and further in view of Jackson (Patent No.: 4,931,782).

Regarding claim 28, the combination of Kent and Tanimoto does not specifically teach the surface of said display is a deformable membrane surface.

Jackson teaches a flexible, deformable membrane formed of a transparent laminate which

placed over the display surface (col. 1, lines 39-51). Ely teaches a touch sensor comprises magnetic field tracking system (col. 13, lines 5-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the deformable membrane surface as taught by Jackson in the system of the combination of Kent and Tanimoto in order allow user to manipulate with the display content.

### ***Response to Arguments***

5. Applicants' arguments filed 09/26/2008 have been fully considered but they are not persuasive because as follows:

In response to Applicants' argument stated "nothing in Kent describes allowing a user to affect the display content of a three-dimensional display". Examiner respectfully disagrees. Kent teaches different types of non-planar 2D input device (i.e., fingers gloved fingers, stylus...) to touch on the touch sensing device (col. 13, lines 63-67) and the touch sensing device enclosing a three dimensional display; wherein both position and orientation of the images on the display are easily obtained and interpreted from a touch (col. 77, line 62 to col. 78, line 11). Applicants' argument stated "the Advisory Action appears to equate the cylindrical sensor of Kent,..., Kent merely describes an input configuration, but does not describe a volumetric display that displays content, the alleged volumetric display (i.e., glass cylinder merely contain waves...as recited by claim 1". Examiner respectfully disagrees. Kent teaches a touch interface is a transparent cylindrical sensor (fig. 19) encloses a volumetric three dimensional display having displays content (pixels to express a display image) (col. 77, lines 64-66, col. 78, lines 27-29). Therefore, the claimed limitations are still read on by the combination of Kent and Tanimoto.

### ***Conclusion***



Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER T. NGUYEN whose telephone number is 571-272-7696. The examiner can normally be reached on Mon-Fri: 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jennifer T Nguyen/  
Examiner, Art Unit 2629

/Richard Hjerpe/  
Supervisory Patent Examiner, Art Unit 2629